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PROCEEDINGS

OF

THE ROYAL GEOGRAPHICAL SOCIETY.

SESSION 1864-5.

Sixth Meeting, 13th February, 1865.

SIR RODERICK I. MURCHISON, K.C.B., PRESIDENT, in the Chair.

PRESENTATION.—*John E. Cowan, Esq.*

ELECTIONS.—*Horatio Bebb, Esq.*; *Charles Harcourt Chambers, Esq.*, M.A.; *Francis Dutton, Esq.*; *Rev. T. S. Fleming*; *Rev. E. A. Illingworth*; *James MacDonald, Esq.*; *Gilbert Macmurdo, Esq.*, F.R.C.S.; *Capt. S. Smyth-Wyndham*; *F. K. Strong, Esq.*; *Robert R. Young, Esq.*, B.A.; *Rev. Wighton Yule.*

ACCESSIONS TO THE LIBRARY.—‘Selections from the Records of the several Governments of India:’ presented by the India Office. Continuations of ‘Transactions,’ &c. &c.

ACCESSIONS TO THE MAP-ROOM.—Maps of the Ordnance Survey. Scale, $\frac{1}{250000}$. Parishes, various, on 136 Sheets.

The first Paper read was—

1. *On the Basin of the River Mahanuddy.* By RICHARD TEMPLE, Esq., Chief Commissioner of the Central Provinces of India.

THIS Paper is an abstract of the geographical portions of an Official Report furnished by Mr. Temple to the Indian Government, after a visit to the Mahanuddy and its tributaries during February, March and April, 1863. The river rises about 85 miles south of Raepoor (south-west of Calcutta), in a wild, mountainous region, and discharges its waters into the Bay of Bengal, below Cuttack. Together with its tributaries, it presents 690 miles of navigable stream; but, owing to the formation of the delta, it has no passage available for commerce to the sea. Of the countries watered by this great river-system, the most important is Chutteesgurh, on the Upper Mahanuddy—a vast plateau singularly bare of trees, whilst all the surrounding hilly tracts are clothed with thick forests. This plain offers an enormous field for improvement. It was once ruled by a

half-civilised Rajpoot dynasty, which had its capital at Ruttunpoor, in the northern part of the plateau, the site being marked by swampy tanks and interminable rows of mango-trees. From 1750 to 1854, Chutteesgurh constituted part of the Bhonsla kingdom of Nagpoor, and in the latter year was annexed to the British dominions. The culture of cotton is fast increasing on this great interior plateau, and in the season of 1862-3 there were 51,000 acres under cultivation, yielding 2,600,000 lbs. Owing to the vicinity of hills and forests all round the plateau, the rains are so regular and copious, that droughts are unknown, and artificial irrigation is not attempted; so good and moist is the soil that even sugar-cane can be raised without regular irrigation. But these plains, so richly endowed by Nature, are cut off by the desolate regions which surround them from the markets of India. The trade of Chutteesgurh is out of all proportion small, as compared with the population and produce of the country. The superabundant crops of cereals have, in recent years, rotted in the stacks for want of a sale. The total area of the plains is computed at about 10,000 square miles, of which about half may be cultivated. There are about 7,802 towns and villages, and the population is estimated at 1,548,155 souls, chiefly Hindoos of the lower classes, and extremely ignorant. Unexhausted forests of teak clothe the hill-side of a portion of the mountainous country to the south of the plateau, and there are also very extensive forests of the *sal*-tree, the timber of which is equal to teak in strength and durability, but has the defect of requiring eight or ten years to become thoroughly seasoned. Coal and iron are found cropping out in numerous places in the hills, and both are worked to some extent by the natives. About 200 boats are now employed in the traffic between Chutteesgurh and Cuttack during the rainy season—the only season in which the river can be navigated, at least beyond 150 miles above Cuttack. Thus the surplus stores of cotton, sugar, grain, oil-seed and fibres, the coal-fields and iron-mines, and the boundless forests of timber-trees of these rich valleys and plains, are all locked up far inland for want of some means of transit to the coast and the chief marts of commerce.

The PRESIDENT, in expressing the thanks of the Society to Mr. Temple, said they must also return their special thanks to the Secretary, Mr. Markham, for the very clear abstract that he had prepared of the paper. It would be impossible to condense a very long paper into more precise and excellent language. He hoped to hear from the Indian authorities who were present, some observations upon the subject.

Mr. JOHN CRAWFORD said Mr. Temple was one of the ablest of the Civil servants of the Indian Government, and had had ample opportunities of examining the country he had written upon, his paper being the result of several years' experience as chief of the Nagpoor district. The country, which is about the size of England and Wales, containing 50,000 square miles, de-

served to be better known. With respect to the cultivation of cotton, the quality furnished by India was not half good enough for Manchester. The capacity of the country to produce cotton is very small, owing to the low state of agriculture and the want of skill and capital. In all the Southern States of America, the quantity of cotton per acre ranges from 400 lbs. to 500 lbs. According to the figures given by Mr. Temple, he had just made the calculation and found that the quantity produced per acre was just 50 lbs. The River Mahanuddy was navigable for 600 miles for a certain portion of the year; but during the summer months it is not navigable at all. But it is navigable only for very small narrow boats, peculiarly fitted for it. There is no outlet to the sea, not even for boats; for the delta consists of small narrow streams broken into a hundred different portions, but rarely navigable to the sea, even for small boats, and always dangerous. A million and a half of inhabitants, spread over 50,000 square miles, was a very poor population, but there was ample room to extend it. The great feature of the country is its being admirably well watered, for in India, and in every tropical country, where there is perennial water there is sure to be fertility. He wished success to this great territory; and he was sure, under the direction of Mr. Temple, it would have success and become an important part of the British dominions in India.

Mr. MARKHAM remarked that the River Mahanuddy would be remembered by many present as having been mentioned in the first volume of 'Heber's Journal.' When approaching Calcutta he observed a stream of fresh water flowing out into the sea at right angles with the Ganges, which he described very much in the same words in which Lieutenant Maury described the Gulf Stream, as a river distinctly bounded on each side by a dark-coloured sea. This was the River Mahanuddy. But the interior from which this river flows was scarcely known at all until Mr. Temple examined it two years ago. The point to which he would draw attention was that the great plateau of Chutteesgurh seemed to be admirably adapted for the New Orleans cotton, which has failed so signally in most other parts of India. The reason of this failure appeared to be that the New Orleans cotton required moisture through every period of its growth—moderate but equable moisture. Throughout the whole of the Bombay Presidency, where the experiments have been tried, there is a period of extreme drought; and this appears to have been the cause of the failure. But in the most southern collectorate of the Bombay Presidency, in Dharwar, near the coast, where the soil receives a certain amount of moisture from both monsoons, it has met with the most extraordinary success, and the cotton of Dharwar is equal to the New Orleans middling of Louisiana. The native cotton, on the contrary, which finds its cradle in the dry country of Scinde, where it grows wild, can endure these extreme droughts in the northern part of the Bombay Presidency. He had himself introduced the Peruvian-coast cotton, a long-stapled kind, suitable to dry climates, into a number of collectorates of the Madras Presidency and into Scinde, and the reports of its success had been most encouraging. But in Chutteesgurh, about 250 miles from the sea, a country which enjoys moderate and equable supplies of moisture almost throughout the year, he believed that the American cotton would flourish as well as it does in the collectorate of Dharwar. During the last year the trade of the district had immensely increased. The demand for grain and cotton has improved the trade of the plateau very largely, and as much as 50,000*l.* of gold and silver have been imported into the country, but not a single halfpenny of specie has left it. It appears that the people there, as in all other parts of India since the time of the Romans, as soon as gold and silver pour into the country, instead of buying commodities with it from other nations, immediately bury it in the ground.

Lord DONOUGHMORE wished to make one observation upon what had fallen from Mr. Markham. It appeared to him that there was little use in intro-

ducing a superior description of cotton into any district of India, unless we had roads or some means of communication by which we could get the cotton out of these districts. It appeared from what had been said that, although the River Mahanuddy drained this plateau to the eastward into the Bay of Bengal, there was no port upon the bay which would answer for shipping the cotton brought down the river. There is no practicable port along the entire coast; from the mouth of the Ganges the whole way down there is nothing but open roadsteads. The outlet, therefore, of this plateau must be to the westward; and he should be very glad to know what was the distance from this plateau—containing 10,000 square miles of land favourable for the purposes of growing cotton—to Nagpoor, the nearest point on the railway, and whether there were any practicable roads leading out of it towards Nagpoor, because it would be unjust and unfair if the Government, or if speculators from Manchester, were to induce the people to grow cotton unless they at the same time gave them facilities for bringing it to market, and disposing of it to advantage.

Colonel BALFOUR, in answer to Lord Donoughmore's remark that there was no seaport on the bay, observed that Pooree, on the coast of the Bay of Bengal, is the seaport of Cuttack (situated in the delta of the river), and that for many months every year ships can lie with safety in the bay. Chutteesgurh is about 150 or 200 miles from Nagpoor, where the railway from Bombay commences. That railway when completed will be about 500 miles in length. With regard to cotton, the Hingenghaut cotton has been long famous in Manchester, where it has hitherto been known as the Mirzapoor cotton. Hingenghaut is about 450 miles from Mirzapoor, and Mirzapoor is about the same distance from Calcutta. That cotton has been reported upon by the American planters as equal to the best Mobile, and it has always fetched a high price in the Manchester market. He believed the Chutteesgurh cotton to be fully equal to it in staple. With regard to the navigation of the Mahanuddy, no doubt there were obstructions in the river, and it should be the object of Government to endeavour to open it for transit. A few lakhs of rupees spent upon a river like that, would go a long way towards making it perfectly safe for six months in the year. He agreed with Lord Donoughmore that, unless we provided cheap means of transport for India, it would be useless urging the people to cultivate produce. The commodities of India are chiefly raw, and of low value per ton; hence a very small mileage charge for their transport over the vast distances required renders them perfectly valueless when they get to the coast. The population of Chutteesgurh is 150 to the square mile; but the country may be able, within a reasonable period, to support double the present population, for the area of the plains of this plateau, computed at about 10,000 square miles, offers an enormous field for improvement. The importance of the River Mahanuddy is not, however, limited to Chutteesgurh or the 50,000 square miles comprised in the basin, but to the area of the whole of the central province, which has 150,000 square miles. Hence if the river were opened up it would certainly lay open that large tract, and enable us to bring down the products, which are now unsaleable in that part of the country, owing to the defective nature of the communications and the relative high charge for transportation to the sea-coast. The opening of the Mahanuddy for navigation, in short, would supply one of India's great wants.

Mr. CRAWFORD said that what was wanted in India was capital and skill, which could never be had under the ryot system. When Europeans become possessed of the fee-simple of the soil of India, and can hold it on fixed taxes, then the cultivation of good cotton will commence in India. It is not to be accomplished by experiments here and there—no Government can direct a project of that kind; it must be left to private enterprise, and the results would in this case be as satisfactory as they have been in Ceylon, where thirty years ago there

was not a single coffee-plant, and now the produce of that article is greater than that of the whole of the West India Islands. This had been the work of European capital and skill directing native labour. With reference to the importation of gold and silver, he thought Mr. Markham was mistaken in supposing that the natives buried the money. With the increase of wealth, the wages of labour are doubled in India; consequently a double quantity of silver is required in this case alone. He was satisfied that the burying of silver is carried out but to a trifling extent.

The PRESIDENT said he agreed completely with what had fallen from Lord Donoughmore with respect to the necessity of having an exit for the produce of the country; and he could not help arriving at the conviction, after having heard this paper by so eminent an officer of the Indian Government, that the Government would surely provide an opening to the river—it might be by the construction of a canal—and also establish a port for the shipment of cotton and other products brought down from an area of many thousand square miles of a most magnificent country.

The second Paper read was—

2. *Visit to the Ruined Palaces and Buildings of Cambodia.*

By Dr. BASTIAN.

THE principal ruins of Cambodia are concentrated in the province of Siemrab. The remains of an old palace at Panom Sok were the first visited by the author, who left the road from Bangkok to Battabong at Tasavai, and pursued a north-easterly direction in reaching the place. The whole country between Siam and Cambodia is an inclined plain, sloping towards the sea; but a portion of the valley of Cambodia, near the Thalesab Lake, is subject to inundation during the rainy season, and at the time of Dr. Bastian's journey (December), he found the whole country a swamp. Of this he had been warned by a Siamese nobleman, who told him that "the ground was not yet dry enough for carts, and not wet enough for boats." He found here the great high-road constructed by the ancient Cambodians, which extends hence an unknown distance into the interior of Cochin China. A remarkable feature was the fine stone bridges which spanned even the lesser streams which it traversed. One of them was a colossal structure, 400 feet long and 50 feet broad, supported on 30 arched pillars, all now overgrown with rank vegetation, but still uninjured. The author believes these structures prove the ancient inhabitants to have been a highland people, as a lowland race, like the present Cambodians, show no such predilection for land-conveyance, but delight in boat-travelling along their rivers and swamps. In a shed in the forest which surrounds the ancient bridge, Dr. Bastian found a collection of images of Brahminical deities. The remainder of the paper was occupied with an account of the author's examination of the great temple of Nakhon Vat and the remains of Nakhon Tom, the ancient capital of Cambodia, and